

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1-9. (cancelled)

10. (previously presented) A method for forming a capacitor element having a capacitor insulation film made of strontium titanate, comprising the sequential steps of:

forming a barrier metal film over a semiconductor substrate;

forming a bottom electrode on the barrier metal film;

depositing an amorphous strontium titanate film on the bottom electrode; and

performing crystallization of said amorphous strontium titanate film into a single-crystal strontium titanate film by rapid thermal annealing said strontium titanate film at a temperature between 500 degrees C and 650 degrees C in an inert gas ambient.

11. (cancelled)

12. (previously presented) The method according to claim 10, wherein said inert gas includes at least one of argon, helium

and nitrogen as a main component thereof.

13. (previously presented) The method according to claim 10, wherein said rapid thermal annealing is conducted for a time period of one minute.

14. (previously presented) A method of claim 10, comprising the further step of:

forming a top electrode on said strontium titanate film.

15. (previously presented) The method according to claim 14, wherein said bottom electrode includes a plurality of layers including a silicon layer and/or titanium nitride layer.

16. (cancelled)

17. (previously presented) The method according to claim 14, wherein said inert gas includes at least one of argon, helium and nitrogen as a main component thereof.

18. (previously presented) The method according to claim 14, wherein said rapid thermal annealing is conducted for a time interval between 15 seconds and five minutes.

19. (previously presented) The method according to claim 18, wherein said rapid thermal annealing is conducted for a time period of one minute.

20. (previously presented) The method according to claim 10, wherein the bottom electrode is a polycrystalline ruthenium bottom electrode.

21. (currently amended) ~~The method according to claim 1~~ A method for forming a capacitor element having a capacitor insulation film made of strontium titanate, comprising the steps of:

depositing a strontium titanate film; and  
heat treating said strontium titanate film at a temperature between 500 degrees C and 650 degrees C in an inert gas ambient,

wherein said heat treating step includes rapid thermal annealing, at the temperature between 500 degrees C and 650 degrees C in the inert gas ambient, conducted for a time period of one minute.

22. (currently amended) ~~The method according to claim 5~~ A method for forming a capacitor element in an LSI, comprising the steps of:

forming a bottom electrode overlying a semiconductor substrate;

depositing a strontium titanate film on said bottom electrode;

forming a top electrode on said strontium titanate film;  
and

heat treating said strontium titanate film at a temperature between 500 degrees C and 650 degrees C in an inert gas ambient,

wherein said heat treating step includes rapid thermal annealing, at the temperature between 500 degrees C and 650 degrees C in the inert gas ambient, conducted for a time period of one minute.